CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 95-190

WASTE DISCHARGE REQUIREMENTS FOR:

UNITED TECHNOLOGIES CORPORATION,
(CHEMICAL SYSTEMS DIVISION - COYOTE CENTER)

600 METCALF ROAD
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. **Site Location**: United Technologies Corporation (UTC), hereinafter also referred to as the discharger, owns and operates the Chemical Systems Division - Coyote Center in Santa Clara County as shown in Figure 1. The site is located in an unincorporated area of Santa Clara County approximately five miles south of San Jose and four miles east of U.S. Highway 101. The site is located in an area of rolling hills and relatively broad valleys. There are several creeks that flow through the site which ultimately discharge into Anderson Reservoir located one-half mile downgradient of the property.

2. **Site History**: UTC began on-site operation in 1959 and occupies 5,200 acres including over 200 stations used for laboratories, research, testing, manufacturing, storage, maintenance, and administration. The discharger develops, manufactures, and tests space and missile propulsion systems.

   Land in surrounding areas is zoned mostly for agricultural use. Ranch lands are located to the north, east, and southeast of UTC. To the northwest and west are two regional parks and some open public land. The nearest residences are a few ranch houses or other dwellings located within 3,000 feet to the north, northeast, and southeast of the site boundaries.

3. **Sewage Treatment Facilities**

   UTC treats and discharges sanitary sewage on site. The sewage treatment facilities are described below.

   3.a. **Wastewater Treatment Plant 2100** is a secondary treatment plant which receives sanitary sewage from approximately 1500 employees. In addition, approximately 7,000 gpd of flow from industrial discharges such as boiler blowdown, cooling

towers, compressor condensate, and heating/air conditioning condensate are directed to the treatment plant.

The monthly average wet weather flow is 29,000 gallons per day and monthly average dry weather flow is 23,000 gallons per day. The design capacity of the treatment plant is 95,000 gallons per day, 120 lbs/day for BOD, and 125 lbs/day for suspended solids.

Effluent from the plant is sprayed onto approximately four acres of hillsides for disposal by evapotranpiration on Sprayfield 2100. Excess water from the sprayfield drains to four cascading ponds (storage ponds 2100/P1-P4). An additional storage pond (pond 2120) in the Panhandle area handles excess flow from pond 2100. The ponds have a combined storage capacity of approximately 7.6 million gallons. Effluent in the ponds is recirculated back to the sprayfield. Sludge from the plant is discharged to drying ponds next to the plant.

In 1982, 1983, and 1986, excessive rains led to overflows of the holding pond systems. In 1986, a 2.3 million gallon pond (storage pond 2120) was added to provide additional storage capacity for emergency situations. However, in 1993 and 1994, again due to excessive rains, there were overflow problems with the pond system. The sprayfield and the storage pond system should be evaluated and if necessary, be retrofitted to prevent future overflow problems.

3.b. Leachfields

A total daily average flow of 2150 gallons is discharged to 5 septic tanks with leachfields. These are leachfields 0080, 0460, 0530, 0560, and 0570. Domestic sewage is discharged into the leachfields.

3.c. Sewage Tanks

Sewage tanks 1319 and 1372 hold domestic and industrial wastewater which is hauled offsite.

4. Other Waste Discharges

4.a. Water Treatment Plant-Pond 2215

Pond 2215 is an earthen pond which receives about 20,000 gallons per month of zeolite backwash water from the water treatment plant.

4.b. Extracted Groundwater

Contaminated groundwater at the site is extracted and reclaimed. Treated

groundwater is used by UTC and offsite users for irrigation, dust control and fire control. This activity is regulated under site cleanup requirements for the site.

4.c. **Open Burning Facility - Station 0891**

This is an area within the Panhandle area used to thermally treat solid rocket propellant, explosive scraps, excessive reactive propellant related materials, propellant contaminated rags, sample residuals, and oxidizer salts. Wastes are burned approximately every two months and the metal burn pans are cleaned after each burn. The residual ash is separated from any metal scraps. Ash is placed in containers for hauling off-site to a class I landfill. EPA and DTSC regulate this disposal activity under RCRA and the permitting process respectively.

5. **Regulatory Status:** The Board has adopted the following orders for the site:

- Waste Discharge Requirements, Order No. 89-008, updated January 18, 1989
- Water Reclamation Requirements, Order No. 91-006, adopted January 16, 1991.
- Site Cleanup Requirements, Order No. 94-064, adopted May 18, 1994, and amended May 17, 1995.

6. **Basin Plan:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Board Approved it on May 21, 1987. The Board has amended the basin plan several times since then. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The existing and potential beneficial uses of Anderson Reservoir, located approximately one half mile downgradient of the discharger's property, include:

a. Municipal Supply
b. Ground water recharge
c. Non - contact water recreation
d. Warm and cold water habitat
e. Wildlife habitat
f. Fish spawning

Anderson Reservoir ultimately discharges to Coyote Creek, which flows northwest to South San Francisco Bay. The existing and potential beneficial uses of Coyote Creek and tributaries include:

a. Industrial process supply
b. Water contact recreation

c. Ocean commercial and sport fishing
d. Warm fresh water habitat
e. Preservation of areas of special biological significance
f. Wildlife habitat
g. Marine habitat
h. Fish migration and spawning
i. Fresh water replenishment
j. Groundwater recharge

The existing and potential beneficial uses of the groundwater underlying and adjacent to the discharger's facilities include:

a. Industrial process water supply
b. Industrial service supply
c. Agricultural supply
d. Municipal and domestic supply

7. **Other Board Policies:** Board Resolution No. 89-39, "Sources of Drinking Water" defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high total dissolved solids (TDS), low yield, or naturally high contaminant levels. The shallow/alluvial ground water zone(s) at this site qualify as potential sources of drinking water. Most portions of the deeper Santa Clara Formation groundwater do not qualify as potential sources of drinking water based on the second criteria the low yield criteria.

8. **State Board Policies:** State Board Resolution No. 68-16 "Statement of Policy with Respect to Maintaining High Quality Waters in California" calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affect beneficial uses. This is based on a Legislative finding, contained in Section 13000, California Water Code, which states in part that it is State policy that "waters of the State shall be regulated to attain the highest water quality which is reasonable."

9. **CEQA:** This action is categorically exempt from the provisions of CEQA pursuant to Section 15304 of the Resources Agency Guidelines.

10. **Notification:** The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13263 to prescribe Waste Discharge Requirements for the discharger and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

11. **Public Hearing:** The Board, at a public meeting, heard and considered all comments

pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13263 of the California Water Code that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS:

1. **Bypass or Overflow:** There shall be no bypass or overflow of sewage from the collection, treatment or disposal system to waters of the State.

2. **Flow:** The average dry weather flow to the sewage treatment plant shall not exceed 95,000 gpd. Average flow shall be determined over three consecutive dry weather months each year.

3. **Effluent Migration Control:** Effluent shall not be allowed to escape from the designated spray area, except into the holding ponds, via surface flow or airborne spray.

B. TASKS:

1. **Evaluation of the Sewage Treatment Plant**
Compliance Date **March 1, 1996**

Submit a technical report acceptable to the Executive Officer to evaluate the sprayfield and the storage capacity of the ponds, including but not limited to a water balance calculation for the system for two consecutive wet winters. The report should determine the reason(s) for overflow conditions which occurred in 1993 and 1994 rainy seasons, and propose to modify the system to prevent future overflows. The report shall include a schedule for implementing the modifications, if any.

2. **Completion of Evaluation of the Sewage Treatment Plant**
Compliance Date **According to Schedule Approved by the Executive Officer**

Submit a technical report acceptable to the Executive Officer documenting the completion of the necessary task identified in Task 1 workplan.

C. SPECIFICATIONS:

1. **Effluent Limits:** The discharger shall assure that the sewage effluent meets the

following requirements:

a.	Dissolved Sulfides	0.1 mg/l maximum
b.	pH	6.0 minimum 9.0 maximum
c.	5-day BOD	Monthly average: 30 mg/l, Daily max:60 mg/l
d.	Dissolved oxygen	1 mg/l minimum
e.	Median value for total coliform bacteria in any five consecutive samples, and	23 MPN/100 ml
	Total number of coliform bacteria in any sample	240 MPN/100 ml
f.	Oil and grease	20 mg/l maximum

2. **Freeboard:** A minimum freeboard of two feet shall be maintained in holding pond P4 and 2120 and a minimum freeboard of one foot in ponds 1, 2 and 3 and water treatment plant pond 2215.

3. **Sprayfield:** Wastewater spraying shall be limited to the area specified in Finding 3a of this Order.

4. **Access:** The public shall be effectively excluded from the treatment plant, holding ponds, and effluent spray area. Perimeter warning signs should be posted indicating that wastewater effluent is not safe for drinking or contact.

5. **Equipment Identification:** All equipment and piping carrying wastewater influent and effluent shall be properly identified.

6. **Flood Protection:** All treatment facilities, the sprayfield and holding ponds shall be protected from erosion, washout, and flooding during a 100 year frequency storm.

7. **Design Capacity:** The holding ponds and the effluent spray area shall have sufficient capacity to accommodate all wastewater generated from the facility and rain water during a 10 year frequency storm.

8. **Ponding of Wastewater:** The discharger shall manage effluent spraying so as to minimize wastewater ponding in the spray field which could cause mosquito breeding problems.

9. **Leachfields and Sewage Tanks:** These facilities shall be managed so that there is no surfacing or ponding of wastewater in the vicinity of the leachfields or sewage tanks.

D. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater, including groundwater reclamation, shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M:** The discharger shall operate and maintain in good working order, and operate efficiently, any facility or control system installed by the discharger to achieve compliance with the requirements of this Order, including groundwater reclamation.

3. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required record are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

4. **Self-Monitoring Program:** The discharger shall comply with the Self-Monitoring Program as attached to this order and as may be amended by the Executive Officer.

5. **Contractor Qualifications:** All technical reports or documents which contain engineering plans or specifications, shall be signed by or stamped with the seal of a professional engineer who was in responsible charge of the work, and who certifies the completeness and accuracy of the data or information being submitted

under his/her charge.

6. **Lab Qualifications:** All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved methods for the type of analysis to be performed or other methods approved by the Board. All laboratories shall maintain quality assurance/quality control records for Board review. The discharger shall maintain the certified analytical results for five years, and make them available to the Board upon request.

7. **Reporting of Changed Owner or Operator:** The discharger shall provide written notification of any changes in site occupancy and ownership associated with the facility described in this Order within one month of such changes.

8. **Rescission of Existing Order:** This Order rescinds Order No. 89-008 (waste discharge requirement).

9. **Periodic WDR Review:** The Board will review this Order periodically and may revise the requirements when necessary.

I, Lawrence P. Kolb, Acting Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 13, 1995.

9/14/95
Date

Lawrence P. Kolb
Lawrence P. Kolb
Acting Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

UNITED TECHNOLOGIES CORPORATION
CHEMICAL SYSTEMS DIVISION
SEWAGE TREATMENT PLANT

600 METCALF ROAD
SAN JOSE, SANTA CLARA COUNTY

ORDER NO. 95-190

ADOPTED ON
September 13, 1995

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

UNITED TECHNOLOGIES CORPORATION,
CHEMICAL SYSTEMS DIVISION

600 METCALF ROAD
SAN JOSE
SANTA CLARA COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13263 and 13267. This Self-Monitoring Program is intended to document compliance with Board Order NO. 95-190 (waste discharge requirements).

2. **Sampling and Analytical Methods:** Sample collection, storage, and analyses shall be performed according to the latest edition of "Standard Methods for the Examination of Water and Wastewater" prepared and published jointly by the American Public Health association, American Water Works association, and Water Environment Federation, or Other methods approved and specified by the Executive Officer.

3. **Analyses and Observations:**

   The discharger is required to perform sampling and analyses according to Table 1 and in accordance with the following:

   a. **Definition of Terms**

      GRAB SAMPLE is defined as an individual sample collected in less than 15 minutes.

      WASTE TREATMENT UNIT is defined as any of the facilities utilized to treat or store the waste, including the sewage treatment plant, the spray field, ponds, sewage tanks, and leachfields.

      STANDARD OBSERVATIONS

      i. Determine height of the freeboard in ponds at lowest point of dikes confining the waste.

ii. Evidence of leaching liquid from ponds and sewage tanks and estimated size of affected area shown on a sketch.

iii. Odor: presence or absence, characterization, source, and distance of travel in all waste treatment units.

iv. Evidence of waste escaping the sprayfield or sewage tanks through surface runoff or airborne spray.

v. Evidence of surfacing or ponding of wastewater as well as mosquitoes breeding in the area of the sprayfield, sewage tanks, and leachfields.

vi. Evidence of erosion at the sewage treatment plant, sprayfield, and the ponds.

b. Description of Observation and Sampling Stations for the Sewage Treatment Plant

STATION

I At a point in the pipe immediately before the treatment plant

E At a point between the effluent discharge point and the sprayfield.

P At a point in one of the holding ponds P1-P4 and 2120 within 1 foot of the water surface and no less than 2 feet from the bank, representative of the wastewater.

L^1 thru L^n Every 200 feet along the down slope side of the sprayfield around the periphery.

4. **Quarterly Monitoring Reports:** The discharger shall submit quarterly monitoring reports to the Board according to the following schedule.

Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Period	Jan-March	April-June	July-Sept	Oct-Dec
Due Date	May 21	August 21	November 21	February 21

Reports from other Self-Monitoring Programs may be combined with these quarterly reports. The reports for the Waste Discharge Requirements shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the

reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Results of Analyses and Observations: The discharger is required to perform sampling and analyses at the sewage treatment plant according to the schedule in Table 1. The discharger shall also report standard observations for the sewage treatment plant, leachfields 0080, 0460, 0530, 0560, 0570, sewage tanks 1319 and 1372, and water treatment plant pond 2215.

5. **Violation Reports:** If the discharger violates requirements in the waste discharge requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

6. **Other Reports:** The discharger shall notify the Board in writing prior to any site activities, such as construction, which have the potential to affect any of the facilities described in this order.

7. **Record Keeping:** The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

9. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Lawrence P. Kolb, Acting Executive officer, hereby certify that this Self-Monitoring Program was adopted by the Board on September 13, 1995.

9/14/95
Date

Lawrence P. Kolb
Lawrence P. Kolb
Acting Executive Officer

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES WASTEWATER TREATMENT PLANT 2100, SPRAY FIELD, AND STORAGE PONDS

SAMPLING STATIONS	I	E	P	L^1 - L^n	LEACHFIELDS	SEWAGE TANKS
TYPE OF SAMPLES		G	G	O	O	O
Flow Rate, (gpd)	D	D				
5-day BOD (mg/l)		2M				
pH		2M	M			
Dissolved Oxygen (mg/l)		2M	M			
Dissolved Sulfides (mg/l) (1)		2M	M			
Settleable Matter, (ml/l-hr)		2M				
Total Coliform, (MPN/100 ml)		W				
Oil and Grease (mg/l)		2M				
Nitrates (mg/l)		2M	M			
Applicable standard observations			W	W	M	M
Toxicity (2)						
Volatile organic compounds (mg/l) (3)	A					
Semi-volatile organic compounds (mg/l) (4)	A					
Arsenic (5)	A					
Silver (5)	A					
Chromium (5)	A					
Copper (5)	A					
Cyanide (5)	A					
Lead (5)	A					
Nickel (5)	A					

TABLE 1 (CONTINUED)

SAMPLING STATION		I	E	P	L^1-L^n	LEACHFIELDS	SEWAGE TANKS
Mercury	(5)	A					
Zinc	(5)	A					

LEGEND:

G= Grab Sample
O= Observation

D = Daily
W = Once each week
2M = Twice per month
M = Monthly

A= Annually

(1) Analyze for this item only when dissolved oxygen is below 1 mg/l.

(2) Analyze grab samples from pond No.4 for this item only if discharging to the creeks. The test shall be the 96-hour static bioassay using either fathead minnow or three-spine stickleback.

(3) Use Analytical Method 8240 or equivalent.

(4) Use Analytical Method 8270 or equivalent.

(5) Total recoverable metals.